RESEARCH ARTICLE

Are Elderly Population Healthy? : A Mixed Method Study from North Gujarat, India

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ABSTRACT

Background and Objectives: Currently, more than 12% of the Worlds elderly Population lives in India. It is projected that the proportion of elderly Indians will rise from 7.5% (91.6 million) in 2010 to 11.1% (158.7 million) in 2025. Morbidity patterns by age clearly indicate that the elderly experience a greater burden of ailments. With increasing elderly population and morbidity pattern, this study aims to understand the health status of the elderly population and its predicting factors in rural areas of northern Gujarat, India.

Methods: It was a mixed method study conducted among 410 elders for quantitative component and 9 elders for qualitative in-depth interview during 2014-15. A structured questionnaire & in-depth interview guide were administered in vernacular language by trained social workers. Thematic analysis was conducted for qualitative data. Multivariate regression analysis was conducted with significant level of 95% CI in R version 3.0.1.

Results: Self-reported health status was found to be poor among one third elderly. The multivariate regression analysis indicates that females, belongs to Schedule Caste/ Schedule Tribe, lives in nuclear family with poor economic conditions, not getting choice of food, having dispute & less social importance have higher likelihood of odds to have poor health status.

Conclusion: One-third of elderly reported poor health status in this study from Northern Gujarat. There is a growing need for interventions to ensure the health of this vulnerable group and to create a policy to meet the care and needs of the disabled elderly. Further research, especially qualitative research, is needed to explore the depth of the problems of the elderly.

Key Words: Elderly, Gujarat, Health, Poor-Health

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Background

Currently, more than 12 percent of the Worlds elderly Population lives in India.[1] The demographic trends suggest that between the years 2000-2050, the population of India in their 60 years and above will increase by 326 percent while those in the age group of 80+ will increase by 700% - the fastest growing group.[2,3] As the elderly population will increase, there will be need for additional health and allied sectors to cater to specific issues of these fastest growing age groups.[1] It is important to realize that ageing is a physiological process and disease/ disability need not be part of life of Indian hexagenarians and octogenarians. A few important characteristics of the elderly population in India are noteworthy. Of the 7.5% of the population who are elderly, two-thirds live in villages and nearly half are of poor socioeconomic status (SES).[4] Half of the Indian elderly are dependents, often due to widowhood, divorce, or separation, and a majority of the elderly are women (70%).[5] Of the minority (2.4%) of the elderly living alone, more are women (3.49%) than men (1.42%).[6] Thus, the majorities of elderly reside in rural areas, belong to low SES, and are dependent upon their families.[7]

To ensure required health services targeted for these vulnerable age groups, the Govt. of India has implemented a national level health program for elders called "National Programme for the Health Care for the Elderly (NPHCE)" in 2011.[3] Care of the elderly has till date focused on managing chronic disorders rather than on the promotion of healthy lifestyle and prevention of chronic diseases. However changes in lifestyle and medical care can

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prevent, postpone, or reverse age-related morbidity; thus low cost strategies to avoid disease and disability in this age group are imperative in the 21st century.[8] Elderly are vulnerable to long term diseases of insidious onset such as cardiovascular illness, Cerebro Vascular Accident (CVA), cancers, diabetes, musculoskeletal and mental illnesses. They have multiple symptoms due to decline in the functioning of various body functions. With emerging changes in our social and cultural values, the elderly who are economically unproductive are sadly neglected. It is recognized that the elderly are prone to psychic disorders through vicissitudes such as social isolation, malnutrition, economic and emotional depression and so on.[9] Clearly, the health issues of the ageing are not restricted to a set of diseases caused at times by free radicals, abnormalities of motor function, audio-visual degeneration and so on; they also include functional incapacitation due to senescent changes in human organs and frailties. All these diseases, infirmities and frailties may push a large number of older persons, particularly those beyond 75 or 80 years, below the threshold of physical-cognitive-sensory abilities required to be autonomous and perform basic activities of daily living (BADL) without support.[10]

Morbidity patterns by age clearly indicate that the elderly experience a greater burden of ailments. With increasing elderly population and morbidity pattern, this study aims to understand the health status of the elderly population and its predicting factors in rural areas of northern Gujarat (Sabarkantha, Banaskantha, Mehsana & Patan), India.

Methodology

It is a mixed method study where a cross-sectional (quantitative component) data have been collected followed by in-depth interviews (qualitative component).

Study Setting

Gujarat state is composed of 32 districts, the average population of a district being 2 million. Districts are further divided into 10-20 blocks (sub-districts) of approximately 100 to 200,000 populations. Diversity in the form of literacy status to health seeking behaviors found across the state. For this study four diverse districts from northern Gujarat have been chosen named as Sabarkantha, Banaskantha, Mehsana & Patan. District Sabarkantha have population of 2,428,589, whereas district Mehsana having population of 184,133, Banaskantha having 3,120,506 and Patan having 1,342,746. This study has been conducted during 2014-15.

Sample & Sampling

A stratified random sampling method was adapted to recruit elderly in this study from four districts of north Gujarat. There were 13 blocks in Sabarkantha, 12 blocks in Banaskantha, 09 blocks in Mehsana and 07 blocks in Patan district. From each block by random sampling method 2 villages were selected and 5 elderly were selected randomly from each village. Thus, a total of 410 elderly were recruited for the quantitative component of the study. For qualitative study purposive sampling was done to recruit 9 elderly from the above sample.

Data Collection

A community based cross-sectional study was conducted amongst elderly population of above selected study districts, Gujarat, India. Confidentiality of identity was insured to all the participants and a written consent was obtained prior to filling up of the questionnaire. The questionnaires were pretested for validity and reliability. Close ended questionnaire were asked by the trained research assistant who were trained prior to the data collection. Demographic data including sex and age family type, poverty status, in the form of Below Poverty Line (BPL) card, caste etc. were asked. The questions pertained to information regarding self-rated health status was asked with poor and good. Current health status, health seeking behaviors, healthcare expenditures along with social status, social satisfaction/ importance, economic conditions etc. were asked as exposure variables. For qualitative study, a semi-structured interview guide was prepared and validated among elderly.

Analysis

Descriptive statistics was done for all the exposure variables, initially univariate analysis was performed. Variables with p-value <0.05 will be included in the regression model. Regression was performed & Odds Ratio was used to summarize the association between self-reported health status (outcome) and other socio-demographic, social status, economic conditions etc. (exposure). EpiData version v2.2.2.183[24] was used for descriptive and univariate inferential analysis (EpiData Association, Odense, Denmark). R version 3.0.1[25] was used for multivariate inferential analysis.

Transcripts were translated and transcripted the same day based on the audio recording and verbatim notes. Manual descriptive content analysis was done to analyze the data.[11] It was reviewed by an independent investigator to reduce bias and improved interpretive credibility. Coding and theme generation were done by using standard procedures and with consensus of research team.[12] Both inductive and deductive codes were generated. Similar codes were combined into themes.[13] To ensure that the results are a reflection of the data, the codes/themes were related back to the original data.[14] The findings will be reported by using 'Consolidated Criteria for Reporting Qualitative Research.[15]

Results

About 86.3% were young older i.e. between 60-69 years and 12.4% were above 80 years of age i.e. very old. Gender wise sample was mostly equivalent as, 56.3% were females whereas 43.7% were males in this study. As India is host for multi religion to multi caste society, this study found that more than half i.e. 217 (52.9%)

were belongs to general community; in other hand 135 (32.9%) belongs to schedule caste (SC) and only 58 (14.1%) belongs to other backward caste. All surveyed elders found to be Hindu by religion. Most of elders they live in joint family 57%. Only 31 % elders live in a nuclear family and 12% as aloof.

It has been found that 47.6% elders engaged in economic activity, mostly for their livelihood. They dependent on animal husbandry 30 (7.3%), agriculture 53 (12.9%) and depends on their interest 48 (11.7%). Still 68% elders have no source of income. When a significant chi-square test conducted to observe the gender difference with the economic engagement; we didn't found any statistical significant as p-value =0.332 i.e. both male & female elders involve in some kind of economic engagement for various reasons. Similarly; more than half elders 56.6% have monthly income more than INR 1500/-. In other hand, 39.8% elders didn't get any financial support from their children. Approximately 60.2% elders get assistance financially from their children. About 1/3rd of elders have no income at all.

Various types of illness have been reported in this study, major were suffering from any kind of non-communicable disease (NCD) i.e. diabetes (23.4%), cardiac disorders (1.5%), hypertension (14.4%) and digestive problems (9.3%). About 51.5% elders didn't complain any illness at the time of survey. We have explored the chief complaints of those who have certain illness; majorly 28% reported un-comfortableness as prime complain of their ill health status. 15.9% complained that nobody takes care of them, 1.2% has impaired vision and 7.1% have pain in joints. About half (48.3%) elders have musculoskeletal problems (hand/leg dysfunction) and others 1.2% have ear and 12% have eye problems. Among them 59.5% seek doctor advice frequently for maintaining health status. Even though certain elders have pre-diagnosed medical conditions, only 26.8% depended upon medicines, whereas 24.6%

Table 1. Socio-Economic Characteristics of elders with respect to their Health status (N=410)

Variable	Types	Total (N=410)	Health Status[a]		p-Value[#]
			Good (n=297)	Poor (n=113)	
Age	60-69 yrs	354 (86.3)	241 (81.1)	113 (100)	
	70-79 yrs	5 (1.2)	5 (1.7)	0	NA
	≥ 80 yrs	51 (12.4)	51 (17.2)	0	
Gender	Male	179 (43.7)	179 (60.3)	0	NA
	Female	231 (56.3)	118 (39.7)	113 (100)	
Marital Status	Unmarried	1(0.2)	1 (0.3)	0	
	Married-Wife passed	87 (21.2)	87 (29.3)	0	
	Married-Husband passed	90 (22)	64 (21.5)	26 (23.0)	NA
	Married	224 (54.6)	137 (46.1)	87 (77.0)	
	Divorced	8(2.0)	8 (2.7)	0	
Caste	General	127 (30.9)	124 (41.7)	3 (2.7)	
	OBCb	58 (14.3)	57 (19.2)	1 (0.9)	0.000***
	SC/STc	225 (54.8)	116 (39.1)	109 (96.4)	
Family Type	Aloof	48 (12.0)	32 (10.8)	16 (15.4)	
	Nuclear	126 (31.4)	39 (13.1)	87 (83.7)	0.001**
	Joint	227 (56.6)	226 (76.1)	1 (1.0)	
Economic Engagement[d]	No	279 (68.0)	192 (64.6)	87 (77.0)	0.000***
	Yes	131 (32.0)	105 (35.4)	26 (23.0)	
Difficulty in Workplace	Yes	66 (16.1)	66 (22.2)	0	
	No	249 (60.7)	136 (45.8)	113 (100)	NA
	Not Applicable	95 (23.2)	95 (32.0)	0	
Savings in Life	No	310 (75.6)	197 (66.3)	113 (100.0)	
	Bank	63 (15.4)	63 (21.2)	0	NA
	Insurance	37 (9.0)	37 (12.5)	0	
Dispute with Son/ Relative	Yes	142 (34.6)	30 (10.1)	112 (99.1)	0.000***
	No	268 (65.4)	267 (89.9)	1 (0.9)	
Care taken by family members	No	28 (6.8)	28 (9.4)	0	
	Good	223 (54.4)	197 (66.3)	26 (23.0)	
	Very good	42 (10.2)	42 (14.1)	0	NA
	Average	117 (28.5)	30 (10.1)	87 (77.0)	
Social Importance	Yes	186 (45.4)	185 (62.3)	1 (0.9)	0.002*
	No	224 (54.6)	112 (37.7)	112 (99.1)	
Less importance in Society	Yes	278 (67.8)	165 (55.6)	113 (100.0)	NA
	No	132 (32.2)	132 (44.4)	0	
Weightage in Social Assembly	Yes	210 (51.2)	209 (70.4)	1 (0.9)	0.000**
	No	200 (48.8)	88 (29.6)	112 (99.1)	
Important role in Family??	Yes	378 (92.2)	26 (89.2)	113 (100.0)	NA
	No	32 (7.8)	32 (10.8)	0	
Opinion in Financial matters	Yes	232 (56.6)	206 (69.4)	26 (23.0)	0.000***
	No	178 (43.4)	91 (30.6)	87 (77.0)	
Expectations from family	Care	157 (38.3)	44 (14.8)	113 (100)	
	Facilitate treatment	88 (21.5)	88 (29.6)	0	
	Care & Love	49 (12.0)	116 (39.1)	0	NA
	Nothing	116 (28.3)	49 (16.5)	0	

a. Self-reported health status of elders; b. Other Backward Caste; c. Schedule Tribe/ Caste; d. Any kind of source of income either directly involving in any work or indirectly by pension or incomes from savings at the time of study

Table 2. Predictors of Poor Health[a] of Elders (Multivariate Regression Analysis) in study districts of Gujarat

Variables	Crude OR (95%CI)	Adjusted OR (95%CI)
Gender		
Male	Ref	Ref
Female	1.31 (1.25,1.38)***	1.3 (1.23,1.38)***
Caste		
General/OBC[b]	Ref	Ref
SC/ST[c]	4.09 (2.58,6.47)***	5.39 (2.98,9.77) ***
Family Type		
Joint	Ref	Ref
Nuclear	2.69 (1.84,3.93)***	3.67 (2,6.71) ***
Economic Status[d]		
Good	Ref	Ref
Poor	1.15 (1.1,1.21)*	1.09 (1.02,1.16)*
Choice of Food		
Yes	Ref	Ref
No	1.08 (0.72,1.62)*	1.9 (1.15,3.14)*
Social Importance		
Yes	Ref	Ref
No	2.41 (1.71,3.38)***	2.8 (1.74,4.52) ***

p-Values: † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

a. Self-reported health status of elders; b. Other Backward Caste; c. Schedule Tribe/ Caste; d. Any kind of source of income either directly involving in any work or indirectly by pension or incomes from savings at the time of study

just require healthy food for their better health. Majorly elders expect care & love from their family members for maintaining normal health. Only 21.5% depends on family for fulfilling their expenses towards medicine requirement. About 1/3rd of elders bear their health expense by their own; whereas other 24.9% elders depend on their son/ relatives to bear these expenses.

Table 1 indicates that there is statistical significant between health status of elders with various indicators. All the indicators have been denoted with p-value p<0.05 for predicting the elders status in the surveyed sample. All the young elders have poor health status as compared to the old elders. Female elders are badly affected as compared to male partners, backward caste such as SC/ST elders have worsen health status as compared to general caste elders found significant in this study. Those elders' lives in joint family found to have better health then those lives in nuclear family. Economic engagement and health of older found to prosperous to each other, because of bad health status they couldn't involve in some kind of earning activities, thus there is no economic engagement. Even those elders have bad health status found to have no savings in their life. Elders having dispute with son/ relatives found to have bad health (99.1%) status as compared to those who have good relation with son/ relatives. Majority of elders those were not having good health complained that, the care taken by the family members were not satisfactory. An important finding is that those elders have bad health status found less importance in society and they didn't get any weightage in social assembly. It may be because of their inactiveness and absence because of poor health status. Elders having poor health expect to be taken a better care for their prosperous health & better end of life care.

The multivariate regression analysis indicates that females (OR=1.3), belongs to SC/ST (OR=5.39), lives in nuclear family (OR=3.67) with poor economic conditions (OR=1.09), not getting choice of food (OR=1.9), having dispute & less social importance (OR=2.8) have higher likelihood of odds to have poor health status as indicated in **Table 2**.

The qualitative findings show that the all the target groups covered in the study feel that the elderly do feel neglected. Even if there is no real problem, the elderly think that nobody sits with them or talks to them and hence they feel neglected.

> *".....The elderly feel that they have spent their entire life on their children and now the children have no time for them"*

> *".....I used to feel lonely, even though I am staying with my son; and that makes me sicker"*

One of the important predictor of the current health status found in this study in both quantitative as well as qualitative findings as inappropriate choice of food and nutrition as per requirement of elders. One of the elder added to this

> *"I don't get my choice of food; thus feeling sick and not attending any social functions also....."*

Another important indicator identified through these interviews are physical activity and feeling of well-being. The reason behind this inactive or poor functional health status identified as

> *"....After my retirement, it was very difficult to spend time, usually I seat near my home and don't do anything, so I feel unhealthy...."*

> *"I am feeling better as till day I am going to my agriculture work, even though am 70+...."*

Discussion

It was observed that the about one-third of the elders have reported poor health status in this current study from Northern Gujarat. Other studies among the elderly about their poor health status in North and South India reported it as 2.627 and 2.42 per person,respectively.[9,16–20] Around 83.7% of the respondents those have poor health status mentioned that they felt sad mainly because of poverty and they stay in a nuclear family followed by illness [OR=3.67 (2,6.71)]. Unlike our study, Prakash et al,.[21] reported that 23.3% of the respondents felt sad because of loneliness followed by feeling neglected (17.3%). In his study, Goel, et al.[22] mentioned that 55.1% of the respondents had a negative attitude towards life. Among socio-economic predictors of poor health status, the current study found

significant among female elders [OR= 1.3 (1.23,1.38)], belongs to SC/ST [OR= 5.39 (2.98,9.77)], poor economic status [OR= 1.09 (1.02, 1.16)] and elders with less social importance [OR=2.8 (1.74,4.52)] have the higher odds for developing poor health conditions, which is similar in line with previous studies.[17]

In developed countries advancing through demographic transition, there have been emerging epidemics of chronic NCDs, most of which are lifestyle-based diseases and disabilities.[7] In contrast, India's accelerated demographic transition has not been accompanied by a corresponding epidemiological transition from communicable diseases to NCDs.[23] This study highlights the elders health issues as NCD i.e. diabetes (23.4%), musculoskeletal problems (48.3%), cardiac disorders (1.5%), hypertension (14.4%), digestive problems (9.3%) etc. Even though certain elders have pre-diagnosed medical conditions, only 26.8% depended upon medicines, whereas 24.6% just require healthy food for their better health. The regression model in this study also indicates that those elders who do not get healthy choice of food are higher odds [OR= 1.9 (1.15,3.14)] of having poor health status; which has been highlighted in the article Situation Analysis of The Elderly in India.[1]

The qualitative findings highlights the social negligence as major contributing factor for their current health status similar to the findings of Prakash et al.[21] There is an urgent need of action to develop strategy to involve the geriatric population in social activities and should be considered as part of their family.

This study has highlighted that the elderly suffers from multiple morbidities, which they often attribute to ageing. Majority of them were in poor socio-economic status, for whom treatment may not be affordable and the only expectation is care and choice of food from their respective family member, which can be fulfilled easily. Considering limitation of the current study, it could better to look into the other aspects of health measurements and its predictors.

Conclusion

One-third of elderly reported poor health status in this study from Northern Gujarat. The results of this study showed that a major proportion of the elderly were out of the work force, partially or totally dependent on others, and suffering from health problems with a sense of neglect by their family members. There is a growing need for interventions to ensure the health of this vulnerable group and to create a policy to meet the care and needs of the disabled elderly. Further research, especially qualitative research, is needed to explore the depth of the problems of the elderly.

Conflict of Interest: None declared

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